the error type. In order to test functionality, the test CLEC also corrected a limited sample of these errors and re-submitted them to the company.

Many of the ordering process performance metrics are timeliness measures designed to characterize the time taken by the company to process notifications to the CLECs. Exhibit E-4 shows these metrics relative to the steps involved in the ordering process. In terms of performance of the ordering process, Exhibit E-7 and E-7a show the results of the end-to-end test relative to these performance metrics for the ordering process. After the first day of testing, the Company made modifications to the EDI systems that resulted in improved average response times. The modifications improved the EDI input process, decreasing the ordering process times. By the last day of the test, BA-NY was meeting or surpassing performance standards for all order types, except timelines of order confirmations for UNE-loops.

The table below compares performance during the third day of the end-to-end test to the company standard.

	Perform	% W/std	Perfrm	% w/std	
Resale					
-Flow-through	0:47	100 %	0:09	100%	2 hours
-Manual	2:30	100%	2:25	100%	24 hours
UNE-Platform	1:48	100%	2:56	100%	24 hours
UNE-Loop					
fewer than 10 Lines					
-Electronic	*		*		24 hours
-Faxed	38:00	50%	31:00	100%	48 hours
10 or greater lines					
-Electronic	*		*		72 hours
-Faxed	78:00	75%	*		96 hours

UNE- Loop orders reflect the results of live orders received over the test period.

* Insufficient sample size gathered during the end-to-end test.

UNE-platform, order reject timelines is average for 3 days because there were no rejects on third day of test.

By the last day on which we were able to collect provisioning data for the end-to-end test, of the total 13,461 test CLEC orders submitted for processing during the end-to-end test, the company had provisioned 10,343 orders. Order confirmations for all of these orders were successfully transmitted to the test CLEC. The average order completion notification timeliness was 15:26 for resale orders and 15:34 for UNE-platform orders. The company achieved the standard of within 24 hours for resale and UNE-platform orders 100% of the time.

In addition to these timeliness measures, we also monitored BA-NY's flow-through capabilities. During the test, 87% of resale orders and 73% of total orders submitted flowed-through the ordering processes without manual intervention. As demonstrated by the end-to-end test, the ordering OSSs currently support flow-through capabilities for resale orders including resale new, resale as-is and certain resale with change order types.

Our review of the systems utilization for the above wholesale ordering system showed that there is also additional capacity available. Specifically, ordering systems capacity utilization averaged 35% during the two average volume days and 54% during the peak volume day. Systems utilization peaked at 66% during the peak day. The results of these tests are detailed in Exhibit E-9. The performance of each of the centers is also reflected in the detail provided in Exhibit E-10.

Our analysis of order system throughput shows that the current ordering OSS can process a maximum of 1,742 orders per hour. Assuming the systems were operating at capacity for an eight hour day, the company could process approximately 14,000 orders a day. Exhibit E-9 shows the throughput per hour and systems capacity utilization over the course of the end-to-end test.

During the pre-test preparation, the company added hardware components and tuned the software to significantly increase processing to the levels shown above. This was accomplished over a period of approximately three weeks. This indicates that, to the extent the limiting factor is similar hardware components, the company can further expand capacity in a relatively short period of time.

The results of our analysis of manual processing capacity show that the company's current capacity is approximately 4,510 orders per day covering all five order centers (Exhibit E11). Exhibit E-10 shows the results of our time and activity studies, which were the basis of our estimate of processing times for each of the five order centers. Manual processing performance for each of the centers is shown in Exhibit E-12.

The table below shows current staffing levels, and our estimate of order capacity per day.

Center	Representatives	Time Per Order	Capacity Per Day
NY UNE-loop Center	17	26.0	255
NE UNE-platform Center	30	6.6	1,773
NY Resale Center	39	13.0	1,170
NE Resale Center	31	18.0	672
ICT Overflow Center	11	6.7	640 (Resale)
TOTAL	128		4,510

F. Details of PROVISIONING ANALYSIS

Objective

The objective of our provisioning analysis was to determine the level of commonality between wholesale and retail service order processing and evaluate performance between the two processes. Additionally, we evaluated the capacity of the company's systems to process wholesale orders at expected 1998 levels.

Current Situation

Overview of historical provisioning volumes

From January through August 1997, BA-NY provisioned 87,612 resale lines in New York. For unbundled loops the company has performed 4,759 UNE-loop line conversions, installed 4,465 new UNE-loop lines, and completed 3,248 pure Interim Number Portability (INP) translations. The company currently performs approximately 100 UNE-loop conversion orders, 180 new UNE-loop orders, and 160 INP orders per month.

Overview of Provisioning Process

Wholesale orders are provisioned in one of two ways. The first method of provisioning shares the same processes and legacy systems with retail operations. The wholesale orders included in this group are all resale orders, UNE-loop orders, and all UNE-platform orders.

The second provisioning method is the manually driven process unique to UNE-loop conversion orders. Exhibit F-1 provides a schematic of the provisioning processes identifying the systems and activities involved in this process. The discussion below provides an overview of the two processes and highlights differences between them.

Most wholesale orders are received into the provisioning system from the ordering system once the order confirmation is returned to the CLEC. The provisioning systems determine, find and assign facilities to the order specifications and update translations at the switch. If the order specifications require a technician at either the central office (CO) or in the field, the provisioning system distributes the orders to the dispatching system, which assigns and authorizes dispatch of a technician. The facilities assignment and control systems (FACS) capture the updated facilities and translations information for all flow-through orders and send the data to the billing systems. If the order cannot flow through the process in the normal way –e.g., the provisioning systems cannot find available facilities, incorrect USOC codes have been used or a problem exists with the translations at the switch–the processing system will send the order to a specific group dedicated to specific flow-through resolution issues. Both the retail and wholesale operations share all these systems and technician resource pools in common.

In contrast to orders that are electronically provisioned through the existing retail process, the provisioning process for UNE-loop conversions (i.e., UNE-loop "hot-cuts") must rely on a largely manual process. The retail provisioning systems support the process, but a manual process is required to coordinate the physical "cut" of the service from BA-NY to the CLEC. No direct retail analog exists, and, therefore, performance is measured against a standard i.e., provisioning completion of UNE-loop orders within six days.

The Carrier Account Team Center (CATC) coordinates the activities of the Recent Change Memory Administration Center (RCMAC), central office, and, when relevant, the CLEC. The CATC coordinates the translations work (e.g., software updates at the switch) with the RCMAC and then calls the Central Office and the CLEC to manage the actual hot-cut. Through these calls, the CATC monitors progress in provisioning the orders, resolves problems, and coordinates the team's activities. Exhibit F-2 shows the process flow for the UNE-loop "hot cut" process.

Presently, the CATC and RCMAC have twelve and four people, respectively, dedicated to wholesale operations. The twelve CATC central office technicians perform coordination activities for the hot-cut. The four translation attendants at the RCMAC update the switch translations.

The metrics used by BA-NY for all orders except UNE-loop conversions focus on measuring the timelines of planned provisions (Installation Intervals Offered), the timelines of actual provisioning (Installation Interval Completed), and the percentage of orders that are not completed by the due date on the order confirmation (Percentage Missed Appointments). Our review of BA-NY's retail and wholesale historical performance metrics also indicates that the two processes are comparable and that in some instances the results for the performance of the wholesale orders are better than those of the retail orders. The historical average intervals offered and completed for resale orders requiring dispatch were better than the comparative retail intervals and within two days for orders requiring no dispatch. UNE-loop and UNE-platform historical offered and completed intervals are better than the resale equivalents. Similarly the quality of the wholesale provisioning processes as reported in the percentage installation troubles within 30 days is lower for wholesale orders compared to the retail comparatives. The company's performance relative to missed appointments for wholesale dispatch orders is better than the retail comparative. In September, 7% of resale orders were missed compared to 16% for retail orders. Orders requiring facilities or no dispatch have a low incidence of missed appointments, i.e. less than 1%. Details of historical performance measures are shown in Exhibit F-4a through F-4d.

Approach

Our initial steps at defining the wholesale provisioning process included interviewing management and line personnel as well as reviewing internal documentation, covering methods and procedures, handbooks, and internal process maps. We interviewed

company representatives from the CATC (New York and New England), Line Distribution Management Center (LDMC), RCMAC, several CO's and wholesale provisioning process and systems owners. In these interviews, we focused on understanding the wholesale provisioning processes and systems across order types, comparing these processes and systems to those of retail and evaluating wholesale provisioning capacity and performance.

To evaluate the similarity of processing between wholesale and retail operations, we selected a sample of 7 wholesale order types (resale "as is" & "as specified", resale complex, resale new line, UNE loop conversion, UNE platform & UNE new line) and 4 retail orders of similar types. Using the provisioning audit trails available in the SOP system, we traced the orders through the provisioning systems to determine if wholesale and retail orders used the same systems in the same sequence.

We also evaluated the wholesale provisioning performance relative to retail performance. To do this, we analyzed historic performance metrics and used the results of the end-to-end test to ensure that all expected order types were included.

The processing capacity of the electronic provisioning systems were evaluated using internal company reports produced by BA-NY on a monthly basis. These reports show system utilization in terms of million instructions per second (mips) used versus the total available. Using the forecasted increase in service order volumes, we were able to estimate the adequacy of current computer system capacity to handle expected 1998 wholesale order capacity.

Because UNE-loop conversions involve activities unique to the wholesale market, a separate assessment of the company's capabilities was required. To assess UNE loop provisioning capacity, we collected processing times and conducted volume studies during live production at the three centers (the CATC, RCMAC, and COs) responsible for provisioning unbundled loop conversions. For the CATC and RCMAC, we performed time and activity studies to capture hot-cut daily volumes and the time spent on their coordination and translation. At four COs of varying size, we also used a tracking sheet to capture the time required to complete activities associated with UNE-loop conversions. In addition, the current staffing for the CATC centers was reviewed to assess current capacity for the region. The results enabled us to assess average processing time for each stage in the "hot cut" process, and current capacity for each center and the COs.

The measures of performance used in our study correspond to the five key measures tracked by the company. These measures reflect wholesale provisioning processes and activity performance relative to retail orders providing data for installation intervals, promptness of provisioning and the quality of service provided, for like orders. Performance associated with the provisioning of UNE-loop conversions and new line additions were compared to BA-NY standards (in the absence of comparable retail analog.)

We also used the end-to-end test to complement our analysis. During the test we observed which order types were electronically processed through the provisioning systems, reviewed the functionality of the process, and compared the wholesale and retail processes. We also analyzed performance measurements captured during the end-to-end test to evaluate systems and processes ability to handle expected average daily 1998 order volumes.

Results

Our review showed that the wholesale and retail provisioning processes are the same for all order types in the scope of our review with the exception of UNE-loop conversion orders. The company uses the same systems, supporting processes, trained staff, and capabilities to provision business and residential resale orders (new connects and conversions), complex resale (Centrex new connects and conversions), new unbundled loops, and unbundled platform orders, as it uses for its retail operations. Exhibit F-3 describes in detail the results of our analysis of the retail and wholesale order samples traced through the provisioning process.

The results of the end-to-end test confirmed historical performance. Key results for the test are shown in the following chart and further detailed in Exhibit F-5.

Performance Metric	Test – Resale orders	Test – UNE orders	Retail Cumulative
Installation intervals – offered (days)	1.9	1.8	0.8
Installation intervals – completed (days)	1.9	1.8	0.8
Percentage missed appointments	0	0	1.7

Results for the end-to-end test for all orders received over the three-day period and provisioned by October 22, 1997.

There are no measurements available for the end-to-end test orders where troubles are reported within thirty days of the date provisioned.

Our review of the systems utilization for this process showed that there is also additional capacity available in excess of that presently required to process orders. The results of these tests are summarized below and detailed in Exhibit E-8.

System	Peak Utilization
SOP	37%
FACS	38%
WFA	89%

Because they follow a distinctly different process from other wholesale/retail orders, we addressed UNE-loop conversions separately. The activities associated with a hot-cut are subject to state Commission requirements resulting from arbitrations that the

company complete the hot-cut in one hour and that the end-user not be without originating service for more than 5 minutes. We therefore evaluated performance relative to the defined criteria. Our review of specific performance metrics indicates that the provisioning process for unbundled loops meets these criteria. Year-to-date through September 1997, the company had completed 91% of unbundled loop conversion orders on time, 88% of the new unbundled loop order on time, and 96% of the interim number portability (INP/RCF) on time. This met the company's standard of 80-85% for these order types.

We analyzed the capacity of the work centers involved in the UNE-loop provisioning including the New York CATC (which coordinates the order and hot cut, and is dedicated to UNE-loop work), the RCMAC (which updates software in the switches), and individual central offices (where CLECs have collocated switches). Based on interviews and time and activity studies, we determined the company's capacity for processing UNE-loop conversions.

Our capacity analysis distinguished between the company's region-wide (BA-N) UNE-loop provisioning activities (at the CATC and RCMAC) and the capacity of central offices.

Our estimate of CO lay-in capacity is based on information obtained from interviews as well as time and activity studies conducted during live production at five metropolitan COs of different sizes. At the largest CO, our studies revealed that a team of technicians can lay-in approximately 48 lines per day per 8 hour shift. At a smaller CO that is likely to receive more residential orders, our studies indicate a team can complete 128 lay-ins per day. Therefore , the capacity at any given CO is between 286 and 760 lines per day.

Based on interviews and our observations, a CO technician can perform an average of 50 hot-cuts per hour which translates into 1050 lines per day. This assumes that a technician is dedicated solely to wholesale orders, works 7 hours, and that there are three shifts per day. As to disconnect orders, a tech can complete at least 9 per hour on average or 369 per day, again assuming a dedicated technician working 7 hours and two teams of three shifts. Accordingly, the number of lay-ins dictates the capacity of the CO. See Exhibits F-6a and F-6b for details of the tracking, resultant data and calculations of capacity at each center.

The RCMAC can complete approximately 308 line translations per day. Although the RCMAC currently employs only 4 translation attendants that are dedicated to UNE-loop conversions, there are hundreds of qualified translation attendants region-wide, many of whom could be reassigned should UNE-loop conversion order volumes increase. Therefore, assuming the company reassigns translation attendants as required, the RCMAC should not be a constraint in meeting UNE-loop conversion volume increases. The time and activity studies conducted at the CATC indicated a capacity to process about 396 lines per day. However, as with the RCMAC, the constraint at the CATC

relates to the number of trained personnel, which currently is 12. Assuming the company redeploys other trained personnel from within the company, it could meet UNE-loop conversion volume increases.

While our analysis considered UNE-Platform orders, the Company has recently decided not to offer UNE-Platform. Based on our understanding of the process that the company will use for local switching, it will connect directly to a CLEC cross connect point with feeds from the main distributing frame and to the switch ports. As is the case with UNE-loops described above, the capacity constraint for loops and ports provisioned together is the laying-in of cable at the central office. At any given office, the amount of lay-in work associated with orders for loops and ports provisioned together is approximately twice that of a UNE-loop. Therefore, if a central office were to perform only those lay-ins necessary for the provisioning of loops and ports, its capacity to provision loops and ports together would be roughly half that of its capacity to provision UNE-loops. Therefore, we would estimate that the daily capacity for provisioning loops and ports in combination is between 143 and 385 lines per day per central office. Because of the way the company intends to provision this service, there should not be any capacity constraints at the RCMAC or CATC.

G. Detail of BILLING ANALYSIS

Objective

The purpose of the billing analysis was to evaluate the ability of the company to capture and provide CLECs with accurate wholesale usage data in a timely manner. We did not evaluate the accuracy of the wholesale bill or the amounts charged for each service or product type.

Current Situation

Customer billing comprises the accumulation, rating and invoicing of usage and recurring and non-recurring charges. In order to enable CLECs to bill their customers, BA-NY supplies CLECs with usage information for all switch- based wholesale customers (including resale and certain UNE) on a daily basis. BA-NY also provides CLECs with a monthly bill for the wholesale usage, recurring and non-recurring based charges payable by the CLEC for the network infrastructure utilized in providing the local telephone service to the wholesale customers. It is the CLEC's responsibility to generate recurring and non-recurring charges based on the customer's products and services, combine it with the usage charges and bill the end customer.

BA-NY uses existing systems to accumulate and provide CLECs with the usage billing information. However, additional functionality had to be added to the billing applications to accommodate the billing of non-recurring and recurring charges to CLECs, as well as to produce the wholesale bill. Additional functionality was added to the CRIS

(Customer Records Information System) and CABS (Customer Access Billing System) applications to accommodate both resale and UNE billing. Exhibit G-1 provides an overview of the billing systems flow for resale and UNE wholesale customers.

Resale Billing

All calls (both retail and resale) are recorded at the central office switches. Once a day, the call records are sent to BA-NY's data processing centers, either electronically or physically via data tape.

In the data center, all records are processed by the AMA/MCRIS (Automated Message Accounting/Message Customer Records Information System). AMA/MCRIS rates, when appropriate, the call records, converts them to the Exchange Message Record (EMR) format and creates the EMR file. The EMR file contains both rated and non-rated usage for all reseller telephone lines processed by BA-NY during the day's cycle. Each CLEC receives an EMR file on business days with all the usage recorded for each of their resale customers. Depending on the type of switch, usage records are provided within either four or seven business days after the call was made. The usage records for BA-NY local, regional, and IntraLATA calls are not rated. Only Information Provider type calls placed to outside services (such as those that offer time and weather information) are rated on the EMR file.

Usage information is also used in creating the wholesale bill. After creating the EMR file, AMA/MCRIS sends the usage information to the BCRIS (Billing Customer Records Information System) application. BCRIS matches it with the relevant customer billing detail from CRIS, calculates the appropriate surcharges and taxes for the entire account, applies payments, and discounts selected items such as Directory Assistance or Business Link usage. The billing information is held in BCRIS until the end of the billing period when it is released to CABS for wholesale bill creation.

After receiving the billing information from BCRIS, the CABS application generates the applicable recurring and non-recurring charges and creates the reseller bill. The wholesale bill is sent to CLECs either electronically, on tape, or CD-ROM. Resellers receive ten monthly bills, one for each of the ten billing periods in the month, covering all reseller customer accounts.

The wholesale bill contains the total BA-NY charges with a breakdown by sub-account. Charges for ancillary services are billed separately to the CLECs administrative accounts in the first billing period of each month.

Unbundled Network Element Billing

Billing for most unbundled network elements is done through the CABS application. Recurring charges for Unbundled Interoffice Transmissions Facilities (IOF), Collocation, and SS7 unbundled elements are billed directly in CABS.

The billing process for usage for unbundled local switching, ISDN and Centrex is similar to resale billing. As for resale, AMA/MCRIS creates the EMR files to provide the usage information recorded by BA-NY switches to the CLECs. The main difference occurs in the transmission of billing usage information from AMA/MCRIS to CABS. Usage data for UNEs does not pass through the BCRIS application, but is sent directly by AMA/MCRIS to CABS.

The CABS application calculates the usage based charges, as well as the relevant recurring and non-recurring charges. It matches the charges with payment and adjustment transactions to calculate the outstanding balance, and produces the wholesale bill. UNE wholesale bills are sent to CLECs once a month.

UNE loop service is not switch based, and therefore does not generate any usage records. The applicable charges are generated by the BCRIS application, and follow a very similar path to resale customers.

For the month of July 1997, BA-NY billed 27 CLECs for almost 14 million call records and recurring charges. Year-to-date through the month of July, the company billed CLECs for more than 58 million call records and recurring charges, and created 182 EMR tapes.

Approach

To assess the company's ability to accurately capture wholesale usage data, we compared the process for collecting wholesale and retail data, and conducted stand-alone usage tests. The usage test involved placing calls over 14 test lines comprised of six resale, six UNE-platform and two retail lines. We made the following types of calls from the test lines:

1. Local intraSwitch
2. Local interSwitch
3. Local toll
4. 1-800
5. IXC-out
6. 0+ collect
7. 0- operator assist
8. Phonesmart dial-back
9. Information Provider calls (976)
10. Directory Assistance with call completion (DACC)

In addition, we made long distance calls from the state of Pennsylvania to the wholesale lines. The calls were made to test BA-NY's ability to capture and provide

CLECs with access-type usage records for unbundled local switching. Usage data was captured for all calls as part of the normal course of business. We reviewed the accuracy of the usage data, comparing the test script with the call records on the EMR files (one each for resale and unbundled local switching).

We also obtained historical statistics measuring the timeliness of BA-NY's delivery of daily usage records to CLECs. The standard for providing usage records is as follows:

- within 3 business days for calls recorded by switches with teleprocessing
- within 6 business days for calls recorded by switches without teleprocessing.

Results

The results of our usage accuracy analysis identified no exceptions. The usage files generated for both the resale and UNE wholesale accounts, reflecting the details of the test calls we made, were compared to the schedule of test calls. All test calls appeared accurately on the usage file. See exhibit G-3 for test results.

Additionally, our review of the historical performance of usage data delivery timeliness shows that BA-NY meets its standards. For September 1997, the company delivered usage data within three business days more than 99% of the time. Details of the timeliness of usage data delivered to CLECs are set out in exhibit G-2.

H. Details of MAINTENANCE AND REPAIR Analysis

Objective

The objective of our maintenance and repair analysis was to determine the level of commonality between wholesale and retail trouble tickets processing and to evaluate the systems' relative performance. Additionally, we evaluated BA-NY's systems capacity utilization to process wholesale trouble tickets at expected 1998 levels.

Current Situation

The maintenance and repair process has two separate but interrelated components. These are the trouble reporting or front-end systems and the trouble resolution or back-end systems. The BA-NY retail front-end interface is known as STARREP. The CLEC maintenance and repair front-end is called RETAS (Repair Trouble Administration System). These electronic interfaces provide access to the back-end operational support systems supporting maintenance and repair. Additionally, BA-NY provides a manually coordinated front-end process to support maintenance and repair for UNE trouble reports. Exhibit H-1 provides an overview of these processes.

The Web-based RETAS interface supports the maintenance process for a wide variety of order types, although there is no current production usage for UNE orders. RETAS

and STARREP provide similar functionality to users (see Exhibit H-2 for a listing of functions supported by each interface). In particular, both systems support testing the line for trouble, creating a trouble ticket, modifying a trouble ticket, closing-out a trouble ticket, manually overriding the system to request the dispatch of a technician, and accessing trouble ticket status and history. RETAS interfaces with all the same back-end systems as STARREP uses to perform the maintenance and repair tasks/functions. Six trouble transaction types are presently available for each system including: (i) Test, (ii) Create Transfer, (iii) Status Trouble, (iv) Modify Trouble, (v) Request Cancellation of Trouble, and (vi) Trouble Report History.

RETAS currently processes approximately 1,800 trouble tickets per month, which is approximately 0.5% of the total 366,000 retail trouble tickets per month processed through STARREP.

Upon receiving a trouble report from an end user and determining that the problem may be in the local loop, the CLEC service representative creates a mechanized line test (MLT) request in RETAS. BA-NY's loop maintenance operating system electronically tests the line and displays the results on a separate MLT response Web page. MLT is the same OSS that is accessed directly by a BA-NY retail representative. RETAS automatically determines the circuit type, geographic region and destination for the CLEC representatives, whereas BA-NY representatives must make these determinations and manually select the MLT service. If there is a problem detected in the local loop, the CLEC service representative can then create a trouble ticket request in RETAS. BA-NY processes this request and provides a trouble ticket confirmation number. An appointment date for the end user is then returned to the CLEC service representative on a trouble ticket response page. To check the status of a trouble ticket, the CLEC service representative creates a status request and receives the status on the corresponding status response page. This request/response environment is consistent across all of the RETAS functions.

CLECs are also able to modify a pending trouble ticket or close out a pending trouble ticket. Changes to a trouble ticket result in a subsequent report being forwarded to a CLEC. CLECs have further functionality to view the three most recently reported trouble tickets on line by generating a Trouble Report History.

For all six transactions noted above, RETAS provides the CLEC with additional automatic functionality whereas the BA-NY representative must manually perform these functions.

Although BA-NY has enhanced the functionality of RETAS to support UNE-loops and most other UNE's, it is not currently utilized by the CLECs to support unbundled loop maintenance. Trouble reports for unbundled loops are handled manually by a team of BA-NY service representatives and technicians. The service representative receives a trouble report from the CLEC and enters it directly into the Work Force Administration Control System (WFA/C). A technician coordinates all testing and repair, and

Approach

Our review of the processes began with interviews of management and staff and reviewing methods and procedures, and where available, historical performance data. Because there are different interfaces for the retail and wholesale systems, we segmented our analysis into two parts in order to understand the front-end and back-end processes separately.

Our analysis of the distinct front-end processes focused on evaluating similarity of performance. Since the front-end electronic repair interface (RETAS) is different from that of retail interface (STARREP), we tested the degree to which the system's interface design affected the time required for an end-user to report line trouble to a CLEC. To evaluate this time, we measured how long a customer service representative spends on each system performing the same two front-end functions: first, the time it takes to perform the mechanized line test and second, the time it takes to create the repair order. We planned and observed the execution of a processing time study, which selected a total of 20 trouble reports per system and captured the total system interaction time during an end user trouble report phone call.

We also evaluated the functionality of the wholesale (RETAS) and retail (STARREP) system interfaces to determine if they are similar. Since UNE orders currently do not pass through RETAS but instead rely on a manually intensive front-end process, we also evaluated the functionality of this manual process.

Our analysis of the back-end focused on comparability and common use of the process. For the back-end we mapped the processes that BA-NY uses to maintain and repair Resale and UNE services. We then compared the wholesale process for maintenance and repair to the retail process for similar products and services. We also selected ten resale and ten comparable retail trouble tickets representing the most frequent trouble types experienced by BA-NY. These trouble tickets were then followed through the process to determine whether the wholesale and retail orders were processed by the same systems. To supplement our review of the process, we evaluated performance using wholesale and retail performance metrics.

The metrics used to measure the performance of wholesale maintenance and repair focus on the RETAS systems response times for six transaction types, the frequency of troubles reported, the timeliness of resolving troubles and the extent to which 'resolved' troubles require further repair within a thirty day period.

Results

The results of our maintenance and repair analysis show that the front-end wholesale and retail system interfaces provide similar functionality and that, on average, wholesale and retail troubles are resolved in similar time frames. In addition, the test of wholesale vs. retail processing by the back-end systems indicate that they use the same systems.

Our review of the front-end process shows that the combined system interaction time for the mechanized line test and trouble ticket creation is approximately 178 seconds for RETAS (wholesale) compared to 162 seconds in STARREP (retail). The difference of 16 seconds is less than 10% of total system interaction time. Exhibit H-3 details the comparison of interaction times by activity.

As discussed above, in many instances we found RETAS to have more functionality than STARREP. Additionally, based on discussions with an operating CLEC and internal BA-NY interviews, we found that training for RETAS required less time compared to STARREP. According to the company, training for RETAS takes 2 days compared to approximately 2 weeks of training for retail representatives using STARREP.

To test the back-end processes we selected five common trouble types and traced them through each system using the company system audit trail reports. As Exhibit H-4 shows, the same systems were used in the same sequence.

Historical maintenance and repair performance metrics are detailed in exhibits H-5a through H-5d. Various aspects of system quality were evaluated by comparing the individual components of the overall trouble report rate. We used network trouble report rates for our comparison of retail and resale, and combined central office and loop trouble rates for our retail to UNE loop comparison. Network trouble report rate showed no significant difference between retail and resale. For the last three months, the average network trouble report rate for retail was 1.5%, compared to 0.9% for resale. Combined central office and loop trouble report rate also showed no significant difference between retail and UNE loops. For the last three months, the average combined central office and loop trouble report rate was 0.5% for UNE loops, 0.9% for resale and 1.5% for retail.

Repair accuracy and effectiveness was evaluated by comparing repeat trouble calls within thirty days. Historical data for this measure showed that there was no significant difference between retail and wholesale. The average repeat trouble call rate for retail over the last three months was 15.8 %, compared to 15.0 % for resale and 1.3 % for UNE loops.

Repair timeliness was evaluated by comparing wholesale and retail mean time to repair (MTTR) values. Historical data for this measurement also showed that there was no significant difference between retail and resale MTTR. However, there was a larger difference between retail and UNE loops. The average MTTR rate for retail over the

last three months was 24.6 hours, while the average MTTR rate for resale was 19.6 hours and for UNE-loop was 16.8 hours.

Another measure of repair timeliness was evaluated by comparing the percentage of missed repair appointments across retail and wholesale. This measure showed that the average percentage of missed C. O. repair appointments for retail is actually higher, over the past three months, than the percentage for either resale or UNE-loop. The measure also showed that the percentage of missed loop repair appointments for retail over the last three months was 12.2%, compared to 13.3% for resale and 21.4% for UNE- loops. However, UNE-loop missed appointments declined in September to 14.6%.

The RETAS application forms part of DCAS and runs on the same hardware and systems architecture as the DCAS pre-order and order functionality. Therefore, the RETAS system capacity has to be assessed in combination with the rest of DCAS. During the end-to-end test the DCAS system processed high volumes of pre-order and order transactions, but only current production levels of repair and maintenance transactions. However, the system utilization statistics collected during the test (See exhibit E-9) indicates the availability of spare processing capacity for the processing of maintenance and repair transactions (MLT test and trouble tickets). The maximum DCAS system utilization factor during the peak day end-to-end test was 66%.

UNE-loop maintenance requests are currently managed independently of RETAS. Based on our review of the company's M&R staffing levels, we estimated that BA-NY currently has the capacity to manage approximately 2,646 manually coordinated repair calls per month. For 1997, the historical resale trouble report rate averaged 2.86% per month. Assuming the same average trouble report rate, the company has the capacity to support (2646/.0286) or 92,517 switched voice grade access lines at current staffing levels. This is greater than the company's projected 1998 UNE loop customer base of 85,000 (See Smith affidavit). Exhibit H-6 shows the detail of the M&R capacity calculations.

ATTACHMENT 24

NEW YORK STATE PUBLIC SERVICE COMMISSION

IN THE MATTER OF

Case 98-C-0690 - Proceeding on Motion of the Commission to Examine Methods by which Competitive Local Exchange Carriers can Obtain and Combine Unbundled Network Elements.

MINUTES OF TECHNICAL CONFERENCE held at the Offices of the Commission, Core 4, Swan Street Building, Albany, New York, on Monday, the 29th of June, 1998, commencing at 10:35 a.m.

BEFORE: Eleanor Stein,
Administrative Law Judge

APPEARANCES:

For DEPARTMENT OF PUBLIC SERVICE
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ALBANY, NEW YORK

By: ANDREW KLEIN, Staff Counsel

For WORLD COM, INC.
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By: KEITH J. ROLAND, Esquire

know, the planning that we do, the work that is done really relates to total demand for many services that will traverse the particular type of cross-connect.

Q Let me repeat my question. It really is, has Bell Atlantic done a study or survey or analysis to determine whether or not there is room on all of the MDFs in its various central offices to accommodate substantial growth in the terminal blocks that are going to be needed if there were widespread use of this collocation arrangement?

A (Albert) Let me go back to my previous response. The demands that we have for all of our other internal purposes and services are still much greater than the demands that we're experiencing or we would reasonably expect to get for collocation. So if we're having shortages in an office, I mean we're after doing something for that office based on increasing capacity to provide services for our total purposes.

Q Well, is the answer to the question that I asked you no, we haven't done that specific study at this time?

A (Albert) My answer is we wouldn't do that kind of a study because it wouldn't make a study like

that. We don't plan to build the job and grow the network and manage it that way.

Q Do you have MDFs that are largely exhausted right now today in materials of their capacity to, say, absorb an increase of ten percent in the number of terminal blocks?

A (Albert) I would say ten percent there might be some. I wouldn't be comfortable giving you off the top of my head.

Q What if I said 20 percent? Would there be more probably than ten percent?

A (Albert) Yes.

Q Is that something that we could make a record request, how many MDFs could--

A (Albert) No. Man, you're talking for hypothetical increase like that, that's a lot of work to calculate that.

Q Let me ask you this, are you aware of what percentage--what the largest market share percentage of the long distance market any one carrier has?

A (Albert) No.

Q Would you accept for purposes of this question that no carrier has more than 50 percent share of the long distance market?

ATTACHMENT 25

In The Matter Of:

DPU 96-73/74, 96-75, 96-80/81, 96-83, 96-94
Bell Atlantic - Arbitrations

Hearing Volume Number 33
May 1, 1998

** FRITZ & SHEEHAN ASSOCIATES, INC. **
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DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY
DPU 96-73/74
DPU 96-75
DPU 96-80/81
DPU 96-83
DPU 96-94

CONTINUED PUBLIC HEARING held at the Leverett Saltonstall Building, 100 Cambridge Street, Boston, Massachusetts, on May 1, 1998, commencing at 10:11 a.m., concerning:

BELL ATLANTIC - ARBITRATIONS

SITTING: Paul Levy, Arbitrator
Paul Vasington, Commissioner
Joan Foster Evans, Hearing Officer
Douglas Denny-Brown, Legal Division

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[1] May 1, 1998 10:11 a.m.

[2] **PROCEEDINGS**

[3] **MR. LEVY:** Good morning. This is the [4] consolidated arbitrations, Bell Atlantic and [5] Sprint, MCI, AT&T, Brooks Fiber, and Teleport. The [6] main topic for today's hearing is the issue of [7] unbundled-network-element provisioning, which comes [8] out of an order issued by the Department on March [9] 13th, 1998, in which the Department requested [10] parties to resume negotiations to see whether [11] resolution of the issue of UNE combinations could [12] be agreed upon and report back regarding the status [13] of those discussions. Based on the reports back, [14] it was determined that it would be appropriate to [15] enter an evidentiary phase of this proceeding.

[16] Sitting with me today are [17] Commissioner Paul Vasington and Joan Foster Evans, [18] from the legal division of the Department.

[19] First on a scheduling issue regarding [20] OSS/NRC rebuttal testimony submitted by Bell [21] Atlantic: The parties have met informally and have [22] revised the schedule for that testimony. [23] Information requests will be due from the CLECs to [24] Bell Atlantic on May 19th, responses from Bell

[1] Atlantic by May 29th, and hearings scheduled at [2] which the Bell Atlantic witnesses will be examined [3] on June 9th and June 10th.

[4] Let's start with today's proceeding. [5] We've had a number of submissions by the parties. [6] We'll mark them as we go along. Let's start first [7] with Bell Atlantic. Mr. Beausejour?

[8] **MR. BEAUSEJOUR:** Good morning, Mr. [9] Levy. On April 17th Bell Atlantic filed its [10] position statement pursuant to the Department's [11] directives in this matter. Today we have four [12] witnesses who are available to answer questions [13] concerning the position statement. They are Paula [14] Brown, Amy Stern, Donald Albert, and Bryan [15] Kennedy.

[16] I would like to have them appear as a [17] panel. I think that would be the most efficient [18] way to go about that. Three of the witnesses have [19] brief opening statements they would like to make.

[20] So at this point I'd mark the Bell [21] Atlantic position statement as Bell Atlantic Combo [22] Exhibit No. 2. We had

[24] **MR. LEVY:** Fine. We'll call that

[1] Bell Atlantic Combinations 2, and this is the April [2] 17th submission by the company.

[3] **MR. BEAUSEJOUR:** That's correct.

[4] (Exhibit Bell Atlantic Combinations 2 [5] marked for identification.)

[6] **MR. BEAUSEJOUR:** I now ask that the [7] witnesses go to the conference table at the front [8] of the hearing room.

[9] PAULA L. BROWN, AMY STERN, [10] BRYAN KENNEDY, and DON ALBERT, Sworn [11] MR. LEVY: Could we have everyone's [12] name in order.

[13] **WITNESS BROWN:** Paula Brown.

[14] **WITNESS STERN:** Amy Stern.

[15] **WITNESS KENNEDY:** Bryan Kennedy.

[16] **WITNESS ALBERT:** I'm Don Albert.

[17] **MR. LEVY:** And perhaps just for the [18] record you could each state what your position is [19] with the company. I know these things change over [20] time. We want to stay up to date.

[21] **WITNESS BROWN:** My name is Paula L. [22] Brown. I'm vice-president, regulatory, for Bell [23] Atlantic.

[24] **WITNESS STERN:** My name is Amy

[1] Stern. I'm director of product management for [2] unbundled wholesale elements.

[3] **WITNESS KENNEDY:** Bryan Kennedy, [4] CON-X Corporation, vice-president, client [5] services.

[6] **WITNESS ALBERT:** And my name is Don [7] Albert. I'm network services director of cocarrier [8] implementation.

[9] **MR. LEVY:** Thank you.

[10] **MR. BEAUSEJOUR:** Thank you, Mr [11] Levy. Ms. Brown will be the first witness to have [12] an opening statement.

[13] **WITNESS BROWN:** Good morning As I [14] stated, I'm Paula L. Brown, and I'm vice-president [15] for regulatory for Bell Atlantic - Massachusetts. [16] I've testified before the Department in numerous [17] proceedings and in this arbitration. I'm here [18] today to respond to the questions about the [19] company's position statement regarding UNE access [20] that was filed with the Department on April 17th.

[21] The company's position statement [22] contains a comprehensive proposal that has two [23] principal parts. First, although the company is [24] not

serving arrangement that we [14] also would use to provide that.

[15] **Q:** This is not a trick question. I'm really [16] just trying to understand. In the case of normal [17] exchange service, the loop would be switched at the [18] local central office; correct?

[19] **A:** [ALBERT] That's right.

[20] **Q:** It would not be transported to another [21] central office to be switched there.

[22] **A:** [ALBERT] That's correct. This is for [23] services where we are configuring them by putting [24] together the combination loop and transport, as

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[1] opposed to loop and local serving switch that you [2] mentioned.

[3] **Q:** Also earlier, Mr. Albert, we were talking [4] about the third-party access concept that you [5] suggested has security problems, labor problems, [6] and accountability problems, and I understand your [7] point on that. I also understand what you're [8] proposing as an assembly type of collocation [9] arrangement. Have you considered a cageless [10] collocation arrangement in which the CLEC's [11] terminating equipment is on the same rack as Bell [12] Atlantic's terminating equipment?

[13] **A:** [ALBERT] Like on Bell Atlantic's main [14] distributing frame?

[15] **Q.** Yes.

[16] **A:** [ALBERT] Yes, that was one that we [17] looked at. You're still going to have some of the [18] security problems that you'd have for the third- [19] party access. You're also going to have a greater [20] number of blocks on Bell Atlantic's frame, which is [21] going to clog up, potentially, a number of our [22] frames and use those up faster.

[23] The assembly room I think provides a [24] better arrangement, in that it's a standardized

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[1] setup that we would use for all CLECs, and it would [2] accommodate additional CLECs over time wanting to [3] combine in that fashion. One of the fears I have [4] with the put-it-right-on-our-frame, besides the [5] fact that it will crap out our frames, is the fact [6] that not every CLEC is going to be there at day [7] one, and as you have them coming in over an amount [8] of time, the places throughout the frame that you [9] locate the blocks are going to get things, you [10] know, more messed up.

[11] **Q:** Can I understand a little bit what you [12] mean by the vernacular "crap out our frames"?

[13] **A:** [ALBERT] Exhaust, run out of capacity, [14] run out of space.

[15] **Q:** That was not a security issue.

[16] **A:** [ALBERT] Not that piece. In that case [17] "crap out" was the technical term. But it's we [18] run out.

[19] **Q:** I just wanted to be clear on that.

[20] (Laughter.)

[21] **MR. LEVY:** Let's take a ten-minute [22] break.

[23] (Recess taken.)

[24] **MR. LEVY:** Let's go back on the

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[1] record.

[2] **Q:** I have a few more questions, Ms. Brown. [3] In the New York agreement, I believe there were [4] some glue charges as part of that agreement. Am I [5] correct?

[6] **A:** [BROWN] Yes, there are.

[7] **Q:** Would you be able to tell us how those [8] were derived?

[9] **A:** [BROWN] I honestly don't know exactly [10] what the calculations were behind those.

[11] **Q:** I guess I'm asking: Was there a [12] calculation, or was this basically a negotiated [13] number, or don't you know?

[14] **A:** [BROWN] I don't know.

[15] **Q:** Could we have that as Record Request [16] Combinations 2, please, the derivation of those [17] glue charges.

[18] **(RECORD REQUEST.)**

[19] **Q:** Just so I understand the company's [20] position in Massachusetts more clearly: If there [21] could be glue charges for UNE combinations in [22] Massachusetts that would eliminate the arbitrage [23] possibility BA - Massachusetts, would that change [24] your position on providing such combinations?

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[1] **A:** [BROWN] It probably would change our [2] position. It would depend obviously on the glue [3] charge and the length and the time period involved.

[4] **Q:** In your judgment, how would we go about [5] calculating the relevant glue charge in [6] Massachusetts?

[7] **A:** [BROWN] I think there are a number of [8] different factors you'd need to look at. You'd [9] need to look at time periods. You'd need to look [10] at exclusions. The combinations in New York, the [11] UNE platforms — we shouldn't call them [12] combinations, because there are lots of [13] combinations. The UNE platforms are limited to [14] specific classes of service and customers and [15] locations. So there are time limitations, [16] geographic limitations, and zone differences, as I [17] understand it.

[18] **Q:** Would it be possible for you to provide [19] us, say, three or four or five examples of Bell [20] Atlantic's view of the arbitrage potential for [21] services in Massachusetts?

[22] **A:** [BROWN] Sure. I'd be glad to do that.

[23] **Q:** Let's make that Record Request 3. I [24] guess what I'd look for there, and really rely on

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[1] your judgment to provide us, not necessarily a [2] representative sample, but, let's put it this way, [3] an interesting sample.

[4] **A:** [BROWN] How about a range, cases where [5] one might be encouraged to use UNE platforms and [6] cases where one might not, give you a full range, [7] with different classes of customers in it.

[8] **Q:** That would be good. And I think mainly [9] we'd be interested in the urban and metro zones in [10] particular. I think for purposes of today's [11] hearing, we can put aside rural. But if you want [12] to do a suburban one or two, that would be fine, [13] also.

[14] **A:** [BROWN] Okay.

[15] **(RECORD REQUEST.)**

[16] **Q:** Mr. Kennedy, you've been patiently [17] sitting there. I have a couple of questions for [18] you, which are as follows.

[19] Tell us a little bit more about your [20] equipment. Is this equipment currently [21] commercially available?

[22] **A:** [KENNEDY] Yes, sir, it is. It's a [23] metallic automated cross-connect system that places [24] a physical metallic connection between two pairs

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[1] coming into the device. It is available on the [2] market. It is in service currently, with two [3] independent telephone companies, a site in each [4] one, and an outside cross-box application within a [5] regional Bell operating company.

[6] **Q:** So are you suggesting there are three of [7] them installed right now?

[8] **A:** [KENNEDY] No, there's actually a total [9] of 11 robots currently installed. It is a new [10] technology. The reason there's technically not [11] more deployed is that we've been going through a [12] lengthy process of Bellcore compliance testing with [13] the product, as well as all of our patent [14] protection and so forth. So it is now at the point [15] where it has completed the Bellcore testing, it's [16] completed field trials with these various [17] customers, and it is ready for deployment.

[18] **Q:** If I understand the machinery

[19] Q: On one of the times when that would be [20] done electronically and on a flow-through basis for [21] Bell Atlantic, if the new customer purchased [22] service from a CLEC, identical service, and the [23] CLEC chose to provide that service through [24] unbundled network elements purchased from Bell

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[1] Atlantic, under the various scenarios proposed in [2] Bell Atlantic's position statement, there is no [3] circumstance in which the CLEC could provision that [4] service on an electronic flow-through basis; isn't [5] that correct?

[6] A: [ALBERT] That's correct. Bell Atlantic [7] would have translations work that we would have to [8] do to convert every one of those lines.

[9] Q: You discussed in your opening statement [10] several alternatives that CLECs had raised in [11] various forums in various ways, and you described [12] the deficiencies with each of those, one of which [13] was logical unbundling through the recent-change [14] process; correct?

[15] A: [ALBERT] That's correct.

[16] Q: And logical unbundling, that phrase is [17] intended to distinguish unbundling using software [18] from physical unbundling, where things are actually [19] taken apart out in the central office or out in the [20] field. Is that an accurate statement?

[21] A: [ALBERT] Well, I think the labeling, the [22] term that's been used for that I think is a [23] misnomer. You cannot use that capability of the [24] switch to unbundle anything. That capability does

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[1] not disconnect the loop from the switch port. What [2] this capability does is, it activates the switching [3] service. But it doesn't have anything to do with [4] the connecting of the loop to the switch. It [5] preassumes the loop is already connected to the [6] switch. Then what it really does is, it activates [7] the switching service. But it is not connecting [8] the loop to the switch.

[9] MR. LEVY: Could we back up on this [10] one? I don't understand what the concept is at [11] all, and it would help me to know what it actually [12] means.

[13] MR. JONES: Could I keep going? I am [14] going to press ahead. I don't know if it will [15] help. You'll tell me if it doesn't.

[16] WITNESS ALBERT: Would you like me to [17] take a shot at that?

[18] Q: Let me ask you a couple of questions, Mr. [19] Albert. We're talking about a functionality, as I [20] understand it, in the switch provided by the [21] recent-change memory administration — what's the [22] last "C" in RCMAC?

[23] A: [ALBERT] "Center."

[24] Q: Would you describe the recent-change

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[1] functionality in Bell Atlantic's existing operating [2] support systems?

[3] A: [ALBERT] The recent-change functionality [4] is the method for defining instructions to the [5] switch of how a switched line will operate. You [6] specify the features that will be on that line. [7] Will it have call-waiting? Will it have three-way [8] calling? Will it have speed calling? You specify [9] the type of calling privileges that it will have, [10] the calling area. You specify other dialing [11] instructions, different types of blocking — for [12] instance, for 900. You specify the class of [13] service: Is it a flat rate? Is it a measured? [14] You specify the type of recording that will be done [15] for billing purposes. You specify the PIC, the [16] interexchange carrier. All the different [17] switch-related features, functions, and parameters [18] associated with that line are established through [19] recent change, which is setting up the instructions [20] and the messages to define how that switched line [21] will work.

[22] Q: This is an operating support system which [23] performs those functions by software-driven [24] procedures; correct?

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[1] A: [ALBERT] By people. You know, it's [2] people talking through a terminal to the switching [3] machine. Now, the system itself, there are further [4] degrees of mechanization that are set up that are a [5] part of that process. There are checks that are [6] made and routines that are run to the instructions [7] that the human being inputs from the terminal.

[8] Q: The recent-change process determines [9] which switch functionalities are available on which [10] line. Is that an accurate statement?

[11] A: [ALBERT] Yes.

[12] Q: So when a switch port has a line [13] connected to it, the recent-change process dictates [14] which of the switch functions are available to, [15] accessible to that line?

[16] A: [ALBERT] It would take the loop that's [17] connected to the switch, and it would say here are [18] the features and the functions that will be placed [19] on that dial-tone service.

[20] Q: And the recent-change process permits [21] Bell Atlantic to essentially disable all switch [22] functionalities from a particular line?

[23] A: [ALBERT] To disable and change, yes.

[24] Q: And you can't using recent change

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[1] physically disconnect a line from a switch; [2] correct?

[3] A: [ALBERT] That's what I was getting at. [4] The recent change has nothing to do with [5] disconnecting the loop from the switch or with [6] connecting the loop to the switch. It's purely [7] establishing the features and the functions of the [8] switch that are already connected to that loop.

[9] Q: And if you thought of unbundling in terms [10] of not physically disconnecting a loop from a [11] switch but, rather, as disabling the switch [12] functionalities from that particular loop, in that [13] sense recent change can, if you accept my sense of [14] unbundling — in that sense recent change can [15] unbundle a switch functionality from a loop. [16] Correct?

[17] A: [ALBERT] I guess I would disagree and [18] not accept your definition of unbundling.

[19] Q: I know you would not, but for purposes of [20] my question, if you accept that — and I'm not [21] suggesting that you do. But if you accept that, [22] that's an accurate description, is it not?

[23] A: [ALBERT] Again, I don't think so, [24] because I don't think you were using that to

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[1] unbundle. To me, unbundling is separating the loop [2] from the switch. If you've still got the loop [3] connected to the switch, it's not unbundled.

[4] MR. LEVY: Just so I'm clear, this [5] RCMAC — what you're saying, Mr. Jones, and I guess [6] you would like to hear Mr. Albert say, is that that [7] functionality, that OSS can be used in essence to [8] disengage, as opposed to unbundle — disengage the [9] switch functionality from the loop functionality.

[10] WITNESS ALBERT: No, I would say it [11] does not disengage those two functionalities from [12] each other. It will change the switch [13] functionality. It will turn off the switch [14] functionality. But it doesn't disengage it from [15] the loop.

[16] MR. LEVY: Can it act so that there [17] is no switch functionality that is being used by [18] that loop; in other words, turn off the switch [19] relative to the loop?

[20] A: [ALBERT] Yes, it can turn the switch [21] off, yes.

[22] MR. LEVY: I was using the word [23] "disengage" in that way. I'm not saying physical [24] disengagement. I'm saying it can make it appear as

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though there's no switch attached to that loop, in terms of what the loop is able to accomplish.

WITNESS ALBERT: Ask me that question again?

MR. LEVY: Is it smart enough to turn off whatever electronics and CPU capacity exists in the switch so that the loop basically can't function as a loop?

WITNESS ALBERT: I'd say the loop still functions as a loop. It will shut dial tone off.

MR. LEVY: Then you just have a wire in the ground; right?

WITNESS ALBERT: It's still a loop.

MR. JONES: A dead loop.

MR. LEVY: It's physically attached to the switch, and dial tone can be turned on again. But if I'm understanding the point of Mr. Jones's questions, it's that it's possible to use that OSS to make the loop unfunctional carrying information.

WITNESS ALBERT: I don't know if I would go as far as to describe it that way. I'd say you would take the dial tone off it. You

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haven't made the loop dysfunctional.

MR. LEVY: I said "unfunctional."

WITNESS ALBERT: You haven't made it unfunctional. The loop is still capable of doing what it does; it just doesn't have any dial tone hanging on it.

MR. LEVY: We could also attach a can to each end of it.

WITNESS ALBERT: That may be where we're heading.

(Laughter.)

Q: What functionality does a loop have without dial tone? What can a customer do with it?

A: [ALBERT] Transport. Nonswitch special services is a perfect example. You can do lots of things with a loop without dial tone.

Q: Dedicated transport.

A: [ALBERT] Yes.

Q: What functionality does a standard, residential-service loop have when a customer has moved out — strike that.

When a Bell Atlantic customer moves out, a residential customer, whatever usual

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configuration you have serving that customer, one of the things that Bell Atlantic does now is to leave left-in or soft dial tone to that end-use space; isn't that correct?

A: [ALBERT] Sometimes.

Q: And that is a recent-change function by which that is done; is that correct?

A: [ALBERT] When you turn the dial tone off, you turn the dial tone off through a recent change.

Q: And you leave whatever capability it is that permits you to provide left-in dial tone? That's done through recent change as well?

A: [ALBERT] What do you mean by — what's your definition of "left-in dial tone"? Because there are three or four different flavors of that you can run into that people use.

Q: Are some of those flavors achievable through the recent-change process?

A: [ALBERT] Where you leave all connections in place and you remove the dial tone from all those, that's achievable through a recent change.

Q: Now, you said in your opening statement, Mr. Albert, if I wrote fast enough and understood

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well enough, that, first of all, Bell Atlantic does permit Centrex customers to access the recent- change software-driven functionality of the network for certain purposes. Is that an accurate statement?

A: [ALBERT] The functionality of the network? Yes. There's a system that will set out in front of the RCMAC function that the Centrex customers will work through to do things like change speed calling, move call-waiting from one line to another line, do rearrangements with telephone numbers. There are a number of limited activities that they can change for a specific defined group of lines which they are able to access.

Q: And the thing that sits out in front of the RCMAC is the so-called firewall?

A: [ALBERT] It's more than a firewall. It's the two different systems that I've described that we've got in Massachusetts, one which is called MACSTAR, and the other which is the acronym CCRS, which is a Bellcore product. MACSTAR was originally a Lucent product and is now handled by another vendor. But that sits out and ties into

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the recent-change capability and is used to provide these Centrex types of changes

Q: And one of the purposes is to ensure that a Centrex customer can access and fiddle around only with that customer's own Centrex lines; correct?

A: [ALBERT] Once you have defined to it the universe of lines that it can fiddle with, which is much different than the capability that we're talking about that would have to be developed for using this to have any CLEC turn on and off any line that was connected to the switch. That's where you get into the security and the partitioning and the large amount of development. It's one thing to say, "Here's a predefined group of lines, and only one person can go in and monkey with them." It's something else to say, "Here's a multiple number of people that can go in and monkey with any line throughout the whole switching machine." That's the two big differences we're talking about between what would exist and what would have to be.

Q: What would it cost and how long would it take to perform the development work necessary to

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create that functionality that you just described?

A: [ALBERT] I don't have any estimates on it. We've had some preliminary discussions with the vendors. We're talking more than a year, and we're talking big bucks.

Q: Bell Atlantic has over the last two years plus performed a variety of different operating- support-system modifications in anticipation of providing service at wholesale rather than just retail levels. Isn't that an accurate statement?

A: [ALBERT] Yes, we've developed number of systems and interfaces and tied them together.

Q: And Bell Atlantic has proposed for recovery in this and other jurisdictions in excess of $100 million operating-support-system development costs in order to recover the costs it claims it incurred in those OSS modifications; correct?

A: [ALBERT] I'm not the cost person and I'm not sure what we've got after recoverywise or cost-proceeding-wise.

Q: And what would be required to achieve the recent-change functionality of the sort you just described, which is lots of different carri

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being able to access all of the lin would require OSS modificatic